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## **2009 BOBCAT HUNTER AND TRAPPER HARVEST IN MICHIGAN**

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### **ABSTRACT**

*A survey was completed to determine the number of people hunting and trapping bobcats in Michigan, the number of days spent afield (effort), and the number of bobcats registered. In 2009, 3,781 people obtained a bobcat harvest tag valid for the hunting and trapping seasons (7% fewer than in 2008). About 59% (2,234) of these tag-holders attempted to hunt or trap bobcats, and 25% of these furtakers registered at least one bobcat. An estimated 1,654 people attempted to hunt bobcats and spent 17,215 days hunting and registered 349 bobcats. Nearly 794 people attempted to trap bobcats and spent nearly 13,467 days trapping and registered 317 bobcats. The number of hunters and trappers combined (-5%) and their effort (-21%) declined significantly statewide between 2008 and 2009; however, the number of bobcat taken between 2008 and 2009 was not significantly different. The hunting season in the UP was 34% shorter in 2009 than 2008 (31 fewer days). Despite the shorter season, the estimated number of hunters, hunting effort, and bobcat harvest by hunters was not significantly different in the UP between 2008 and 2009. The trapping season in the UP was 51% shorter in 2009 than in 2008 (65 fewer days). Compared to 2008, the estimated number of trappers (-25%), trapping effort (-40%), and bobcats registered (-22%) by trappers decreased significantly in the UP in 2009.*

### **INTRODUCTION**

The Natural Resources Commission (NRC) and Michigan Department of Natural Resources (DNR) have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are one of the management tools used to accomplish this statutory responsibility. Estimating hunter and trapper participation, harvest, and days afield (effort) are the primary objectives of these surveys. Estimates derived from harvest surveys,



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as well as information from mandatory registration reports, field surveys, and population modeling are used to monitor bobcat (*Lynx rufus*) populations and establish harvest regulations.

During 2009, bobcats could be harvested during both hunting and trapping seasons (Tables 1 and 2). The length of the hunting and trapping seasons in the UP were shortened by 31 and 65 days, respectively, compared to 2008. In order to hunt or trap bobcats, furtakers were required to obtain a free bobcat harvest tag, in addition to a fur harvester license. In the Upper Peninsula (UP), except Drummond Island, furtakers could legally take and register two bobcats in the hunting and trapping seasons combined. Only one bobcat could be taken from Drummond Island (Unit B), and only one bobcat could be legally taken and registered in units C or D combined (Lower Peninsula [LP]) (Figure 1). Successful furtakers were required to immediately attach the harvest tag to the bobcat and were required to register bobcats within 10 days of the end of the season for the unit in which the bobcat was taken. Furtakers were not allowed to keep bobcats that were beyond the legal limit of bobcats per person and bobcats taken outside the area open for harvest (incidental catches). Furtakers were required to bring incidental catches to a registration station if they could not be released alive. Although all furtakers harvesting a bobcat were required to present their animals at a DNR office for registration, this survey does not present information collected from registered bobcats.

Prior to 2004, only hunters were allowed to harvest a bobcat in the LP, as bobcat trapping was restricted to the UP (Tables 1 and 2). During 2004, 2005, 2008, and 2009, an 11-day bobcat trapping season (December 10-20) was held on private lands in portions of the LP.

In 2009, trappers could use foothold and body-gripping traps (i.e., conibears) to capture bobcats in the UP and foothold traps only in the LP. Live traps were also legal if set within 150 yards of a residence or farm building. Bobcat trapping was permitted on both public and private lands. Most hunters traditionally used calls or dogs to take bobcats (Frawley and Etter 2008).

## **METHODS**

The Wildlife Division provided all furtakers the option to report voluntarily information about their hunting and trapping activity via the internet. This option was advertised on the DNR website and an email message was sent to bobcat harvest tag holders that had provided an email address to the DNR (650 furtakers). Furtakers reported whether they attempted to hunt or trap a bobcat, number of days spent afield, and number of bobcats they registered. Hunters were also asked to report their hunting method (e.g., dogs, calls) and the number of bobcats that were within range to take but they chose not to harvest. Hunters that used dogs were asked to report who owned the dogs, number of occasions their dogs chased a bobcat, and whether they hired a guide. Trappers were asked to report the number of bobcats caught in traps and the number of bobcats released alive. Trappers also were asked to report the types of traps used, their preferred trap type, and whether they caught any bobcats in a trap set for another animal. All furtakers were asked the ownership of lands where they pursued bobcats and their opinion of the status of the bobcat population in the county where they preferred to hunt or trap. Following the 2009 bobcat hunting and trapping season, a questionnaire was sent to all harvest tag holders that had not already voluntarily reported harvest information via

the internet (3,671 tag holders). Furtakers receiving the questionnaire in the mail were asked the same questions as furtakers responding on the internet.

Questionnaires were mailed initially during early April 2010, and nonrespondents were mailed up to two follow-up questionnaires. Although 3,671 people were sent the questionnaire, 62 surveys were undeliverable, resulting in an adjusted sample size of 3,609. Questionnaires were returned by 2,295 people, yielding a 64% adjusted response rate. In addition, 111 people voluntarily reported information via the internet before questionnaires were mailed.

Although all harvest tag holders had an opportunity to report information about their hunting and trapping activity, not everybody reported. To extrapolate from the tag holders that completed their questionnaire to all people obtaining harvest tags, estimates were calculated using a stratified random sampling design that included two strata (Cochran 1977). Furtakers were stratified based on whether they had voluntarily reported their trapping activity on the internet. The statewide estimate of the mean number of days required to harvest a bobcat was calculated using a different ratio of effort to harvest for each stratum (i.e., separate ratio estimator). The number of animals registered for each stratum was used as an auxiliary variate to improve the precision of ratio estimates. The 95% confidence limit (CL) was also calculated for all estimates. This CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or nonresponse bias.

Statistical tests are used routinely to determine the likelihood the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating the difference between the means was larger than would be expected 995 out of 1,000 times ( $P < 0.005$ ), if the study had been repeated (Payton et al. 2003).

## RESULTS

### Hunting and Trapping Combined

In 2009, 3,781 people obtained a bobcat harvest tag valid for the bobcat hunting and trapping seasons, which was 7% fewer than in 2008. About  $59 \pm 1\%$  (2,234) of these tag holders attempted to hunt or trap bobcats (Table 3). Furthermore, about  $6 \pm 1\%$  ( $214 \pm 21$ ) of the tag holders attempted both hunting and trapping bobcats.

Furtakers spent 30,701 days afield ( $\bar{x} = 13.7 \pm 0.5$  days/furtaker) and registered 666 bobcats ( $\bar{x} = 0.30 \pm 0.02$  bobcats/furtaker). Furtakers spent about 18,403 days afield pursuing bobcats in the UP and 11,516 days in the LP (Table 3). About 25% of the furtakers registered at least one bobcat (Table 4). Nearly  $19 \pm 1\%$  of the furtakers registered only one bobcat and  $5 \pm 1\%$  registered two bobcats. About 30% of the furtakers in the UP registered at least one bobcat (Table 4). Nearly  $20 \pm 2\%$  of the UP furtakers registered only one bobcat and  $11 \pm 1\%$  registered two bobcats. An estimated 19% of furtakers in the LP registered a bobcat.

The number of furtakers (-5%) and their effort (-21%) declined significantly statewide between 2008 and 2009; however, the number of bobcat taken between 2008 and 2009 was not

significantly different (Tables 3-4, Figure 2). Most changes within management units between 2008 and 2009 were not significantly different except in UP when furtaker numbers (-18%) and their effort (-31%) declined significantly. In addition, furtaker effort decreased 20% in Unit D between 2008 and 2009.

Counties with 140 or more furtakers that pursued bobcats included Delta and Alcona (Table 5). Counties with 40 or more registered bobcats taken within that county included Delta, Chippewa, Mackinac, and Ontonagon.

About  $30 \pm 1\%$  of bobcat tag-holders reported the bobcat population was stable in the county they preferred to hunt or trap bobcats, which was similar to the 2008 estimate (Figures 3-5). About  $13 \pm 1\%$  reported bobcat numbers were improving and  $12 \pm 1\%$  reported fewer bobcats. Nearly  $37 \pm 1\%$  of the tag-holders were uncertain of the status of bobcats.

## Hunting

About  $44 \pm 1\%$  (1,654 hunters) of the tag-holders attempted to hunt bobcats during the 2009 seasons (Table 6). About 565 furtakers hunted in the UP and 1,071 hunted in the LP. These hunters had hunted bobcats an average of eight years ( $\pm 0.5$  year). Bobcat hunters most frequently hunted on public land ( $66 \pm 2\%$ ). About  $41 \pm 2\%$  of the hunters hunted on private land not owned by themselves or their family, while  $40 \pm 2\%$  hunted bobcats on their own land or land owned by their family. Nearly  $30 \pm 2\%$  of the hunters hunted on public land only,  $33 \pm 2\%$  hunted on private land only, and  $36 \pm 2\%$  hunted on both public and private lands.

Hunters spent about 17,215 days afield hunting bobcats ( $\bar{x} = 10.4 \pm 0.4$  days/hunter) and registered an estimated 349 bobcats ( $\bar{x} = 0.21 \pm 0.02$  bobcats/hunter, Table 7). Hunters spent about 6,616 days afield hunting bobcats in the UP and 10,126 days hunting bobcats in the LP. The estimated number of days of effort per bobcat registered by hunters statewide was 49.5 days in 2009.

Hunters registered about 52% of the bobcats registered by furtakers (Figure 6). About 20% of bobcat hunters harvested at least one bobcat (Table 7). Nearly  $18 \pm 1\%$  of hunters registered only one bobcat and  $1 \pm 0.4\%$  registered two bobcats. An estimated 22% of the hunters in the UP registered at least one bobcat;  $19 \pm 2\%$  of UP hunters registered one bobcat and  $3 \pm 1\%$  registered two bobcats. An estimated 17% of hunters in the LP registered a bobcat.

Counties with 100 or more hunters pursuing bobcats included Alcona, Oscoda, Montmorency, and Roscommon (Table 8). Counties with more than 20 hunter-registered bobcats originating from that county included Alcona, Delta, Mackinac, and Menominee.

The number of hunters statewide and their hunting effort did not change significantly between 2008 and 2009 (Table 6). However, the number of hunters and their hunting effort increased significantly in Unit C in the LP. The number of bobcats passed by hunters and bobcats registered by hunters did not change significantly statewide between 2008 and 2009. The number of days of effort per bobcat registered by hunters statewide (49.5) was not statistically different from estimates for 2008 (Table 9, Figure 7). Although effort per registered bobcat did not change in the LP, effort per registered bobcat decreased significantly (-23%) in the UP.

Hunters most frequently used calls ( $60 \pm 2\%$ ) or dogs ( $37 \pm 2\%$ ) to hunt bobcats (Table 10). The estimated number of people hunting bobcats with dogs statewide did not differ significantly between 2008 and 2009 (Table 11). Hunting effort, bobcats passed by hunters, and bobcats registered by hunters using dogs also did not change significantly statewide between 2008 and 2009 (Tables 11 and 12). The estimated number of people hunting bobcats with calls statewide increased significantly (13%) between 2008 and 2009 (Table 13). Among hunters using calls, the number of bobcats registered and the proportion of hunters registering a bobcat increased significantly among hunters statewide between 2008 and 2009 (Table 14).

Bobcat hunters using dogs participated in an estimated  $2,924 \pm 298$  chases of bobcats during the open season, which was a significant 14% decline from 2008 (Figure 8). About  $29 \pm 2\%$  of the bobcat hunters had an opportunity to harvest a bobcat but chose not to harvest the bobcat. Thus, an estimated  $473 \pm 30$  hunters chose not to harvest bobcats on  $1,387 \pm 142$  occasions (Figure 8). Among those hunters that passed up an opportunity to take a bobcat,  $41 \pm 3\%$  passed one bobcat,  $21 \pm 3\%$  passed two bobcats,  $12 \pm 2\%$  passed three bobcats,  $10 \pm 2\%$  passed four bobcats, and  $16 \pm 2\%$  passed five or more bobcats. The estimate of the number of bobcats passed by hunters should be viewed cautiously because hunting partners may have reported passing the same bobcat; thus, the estimate will be inflated by an unknown amount. Few bobcat hunters ( $11 \pm 2\%$ ) that hunted with dogs hired a guide service to assist with their hunting ( $69 \pm 12$  hunters).

About  $30 \pm 2\%$  of bobcat hunters reported the bobcat population was stable in the county they preferred to hunt bobcats, which was similar to the 2008 estimate (Figures 3-5). About  $13 \pm 1\%$  reported bobcat numbers were increasing and  $16 \pm 1\%$  reported fewer bobcats. Nearly  $33 \pm 2\%$  of bobcat hunters were uncertain of the status of bobcats.

## Trapping

An estimated  $21 \pm 1\%$  (794 trappers) of the tag-holders trapped bobcats during the 2009 season (Table 15), and these trappers had trapped bobcats an average of nine years ( $\pm 1$  year). Most trappers trapped bobcats on private land owned by themselves or their family ( $52 \pm 3\%$ ). Roughly equal proportions of trappers trapped on private lands not owned by themselves or their family ( $37 \pm 3\%$ ) or trapped on public land ( $35 \pm 3\%$ ). About  $63 \pm 3\%$  trapped on private land only,  $14 \pm 2\%$  of the trappers trapped on public land only, and  $21 \pm 2\%$  trapped on both public and private lands.

Trappers spent about 13,468 days afield trapping bobcats ( $\bar{x} = 17.0 \pm 1.0$  days/trapper), caught 475 bobcats, registered 317 bobcats ( $\bar{x} = 0.40 \pm 0.04$  bobcats/trapper), and released 158 bobcats from their traps during the 2009 season (Table 15, Figure 9).

The number of trappers (-21%), number of days spent trapping (-39%), number of bobcats captured (-20%), and number of bobcats registered (-21%) by trappers decreased significantly statewide between 2008 and 2009 (Table 16). The proportion of trappers catching and registering a bobcat did not change significantly between 2008 and 2009 (Tables 15 and 17). The estimated number of days of effort per bobcat registered by trappers statewide was 42.4 days in 2009 and was significantly less (23% decrease) than in 2008 (Table 18, Figure 7).

Trappers registered about 48% of the bobcats registered by furtakers (Figure 6). About 35% of bobcat trappers captured at least one bobcat and 29% registered at least one bobcat (Table 17). Nearly  $19 \pm 2\%$  of the trappers registered only one bobcat and  $11 \pm 2\%$  registered two bobcats. Nearly  $11 \pm 2\%$  of the bobcat trappers caught bobcats that they released. They released 158 bobcats from their traps. About  $8 \pm 1\%$  of the bobcat trappers caught a bobcat in a trap set for another furbearer (Figure 9).

Counties with 60 or more trappers pursuing bobcats included Chippewa, Delta, and Menominee (Table 19). Counties with more than 30 registered bobcats originating from that county included Delta, Chippewa, Ontonagon, and Gogebic.

Most trappers used foothold traps (76%), while 44% of the trappers used body gripping traps (i.e., conibears) (Table 20). Most trappers preferred to use foothold traps (42%), while 33% preferred to use conibears (Table 21). An estimated 16% of trappers did not have a preferred trap type.

About  $45 \pm 3\%$  of bobcat trappers reported the bobcat population was stable in the county they preferred to trap bobcats (Figures 3-5). About  $20 \pm 2\%$  reported bobcat numbers were increasing and  $13 \pm 2\%$  reported fewer bobcats. Nearly  $19 \pm 2\%$  of bobcat trappers were uncertain of the status of bobcats.

## DISCUSSION

Many factors influence bobcat harvest trends including furtaker numbers, bobcat numbers, harvest regulations, habitat conditions, weather, and fur prices; thus, any interpretations of trends should be viewed cautiously. Moreover, estimates of events that occur infrequently (e.g., harvesting a bobcat) are difficult to estimate precisely using common sampling designs (Cochran 1977). Relatively few furtakers harvest bobcat; thus, estimates from the statewide fur harvesters survey from previous years often have been imprecise (Frawley 2001). Beginning with the 2004-2005 bobcat season, however, all licensed furtakers attempting to harvest a bobcat in Michigan were required to obtain a free bobcat harvest tag from the DNR. Beginning with the 2004 season, the DNR has used these lists of tag holders to design surveys that result in more precise estimates.

Using indices to monitor wildlife populations is standard practice in wildlife management, and most states use a variety of indices for evaluating furbearer populations. The DNR considers the logistics of data collection, data reliability, ability of the index to detect population change, and cost when selecting an index. Historical, long-term data sets are also valuable for evaluating changes in harvest regulations over time. The DNR uses several indices to monitor the bobcat populations and to recommend to the NRC changes in bobcat harvest regulations. Each of these indices measures an attribute of the bobcat population and independently can be used to monitor changes in population status. Use of multiple indices strengthens the assessment of population status.

The hunting season in the UP was 34% shorter in 2009 than 2008 (31 fewer days). Despite the shorter season, the estimated number of hunters, hunting effort, and bobcat harvest by hunters was not significantly different in the UP between 2008 and 2009. The trapping season in the UP was 51% shorter in 2009 than in 2008 (65 fewer days). Compared to 2008, the

estimated number of trappers (-25%), trapping effort (-40%), and bobcats registered (-22%) by trappers decreased significantly in the UP in 2009.

The number of furtakers pursuing bobcats in Michigan declined 25% from 2003 to 2009 (Figure 2). During this period, the number of days spent pursuing bobcats also declined 40%, and bobcat harvest statewide declined 44%.

Between 1997 and 2007, the days of effort required by furtakers to harvest a bobcat in both the UP and LP increased significantly (Figure 7). Since 2007, however, the effort per registered bobcat has declined in the UP and has been relatively unchanged in the LP.

About 25% of bobcat hunters and trappers combined registered at least one bobcat in Michigan during the 2009 seasons, while 23-25% ( $\bar{x} = 24\%$ ) of bobcat hunters and trappers harvested at least one bobcat in Michigan during the last three years (Frawley and Etter 2007, 2008). Success rates in Michigan during the last three years have been lower than success rates of hunters and trappers in Wisconsin (58-71% [ $\bar{x} = 63\%$ ] during 2007-2009, Dhuey and Olson 2008, 2009, 2010) and in Pennsylvania (39-42% [ $\bar{x} = 40\%$ ] during 2006-2008, Lovallo 2009). Differences between states may reflect differences in bobcat numbers and harvest regulations.

Approximately equal numbers of furtakers (hunters and trappers combined) pursued bobcats in the UP and the LP; however, furtakers expended 60% greater effort in the UP than in the LP (Table 3). The proportion of furtakers registering a bobcat also was higher in the UP than the LP (30% versus 19%). These differences between regions partly reflect differences in regulations as furtakers could legally harvest only one bobcat from the LP, while two bobcats could be taken from the UP. Moreover, seasons were longer in the UP than in the LP (Tables 1 and 2).

Nearly 90% more people attempted to hunt bobcats in the LP than in the UP in 2009 (Table 6), although the season is shorter in the LP (Tables 1 and 2). Hunters in the LP spent nearly 53% more days hunting bobcats than their counterparts in the UP. Hunters in the LP had more occasions where they chose not to harvest a bobcat than hunters in the UP; however, the proportion of hunters registering at least one bobcat was similar between the LP and UP.

Although there were nearly twice as many bobcat hunters than trappers in Michigan during the 2009 seasons, trappers registered about the same number of bobcats as hunters. Bobcat hunters devoted an average of 50 days of effort per bobcat registered, while trappers spent about 42 days of effort per bobcat registered.

Hunters that used dogs were more successful than hunters using calls (21% of hunters using dogs registered a bobcat versus 16% of hunters using calls, Table 10). Lovallo (2009) reported a mean success rate of 39% for hunters using dogs in Pennsylvania during 2000-2008, while the mean success rate for hunters using calls in Pennsylvania was 14%. Kitchell and Olson (2005, 2006, 2007) and Dhuey and Olson (2008, 2009) reported 42-79% ( $\bar{x} = 59\%$ ) of hunters using dogs registered a bobcat in Wisconsin during 2004-2006, while 18-48% ( $\bar{x} = 28\%$ ) of hunters not using dogs registered a bobcat.

About 11% of the bobcat trappers in Michigan released a bobcat from their traps set during the 2009 season, which was similar to the 2008 estimate (Frawley and Etter 2008). In comparison, 7-12% ( $\bar{x}$  = 9%) of Wisconsin bobcat trappers released a bobcat from their traps during 2006-2009 in Wisconsin (Kitchell and Olson 2007, Dhuey and Olson 2008, 2009, 2010).

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## **LITERATURE CITED**

- Cochran, W. G. 1977. Sampling techniques. John Wiley & Sons, New York, USA.
- Dexter, M.H., editor. 2009. Status of wildlife populations, fall 2009. Unpublished report, Division of Fish and Wildlife, Minnesota Department of Natural Resources, St. Paul, USA.
- Dhuey, B. and J. Olson. 2008. Bobcat hunter/trapper survey, 2007. Wisconsin Wildlife Surveys, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.
- Dhuey, B. and J. Olson. 2009. Bobcat hunter/trapper survey, 2008. Wisconsin Wildlife Surveys, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.
- Dhuey, B. and J. Olson. 2010. Bobcat hunter/trapper survey, 2009. Wisconsin Wildlife Surveys, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.
- Frawley, B. J. 2001. 1997-2000 Michigan furbearer harvest surveys. Wildlife Division Report 3355. Michigan Department of Natural Resources, Lansing, USA.
- Frawley, B. J. and D. Etter. 2007. 2006 bobcat hunter and trapper harvest in Michigan. Wildlife Division Report 3474. Michigan Department of Natural Resources, Lansing, USA.
- Frawley, B. J. and D. Etter. 2008. 2007 bobcat hunter and trapper harvest in Michigan. Wildlife Division Report 3486. Michigan Department of Natural Resources, Lansing, USA.
- Kitchell, J. and J. Olson. 2005. Bobcat hunter/trapper survey, 2004. Wisconsin Wildlife Surveys, Volume 15, Issue 5, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.
- Kitchell, J. and J. Olson. 2006. Bobcat hunter/trapper survey, 2005. Wisconsin Wildlife Surveys, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.



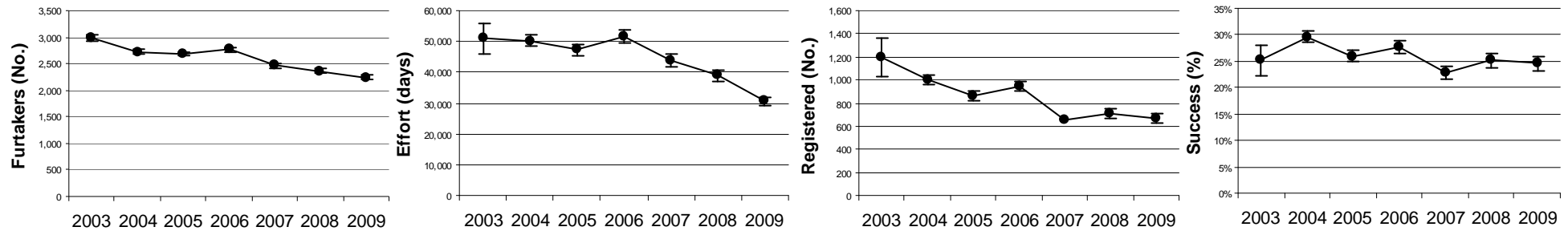
Kitchell, J. and J. Olson. 2007. Bobcat hunter/trapper survey, 2006. Wisconsin Wildlife Surveys, Wisconsin Department of Natural Resources, Madison, Wisconsin, USA.

Lovallo, M. J. 2009. Bobcat harvest management. Federal Aid Project Annual Job Report, Project Number 06630, Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

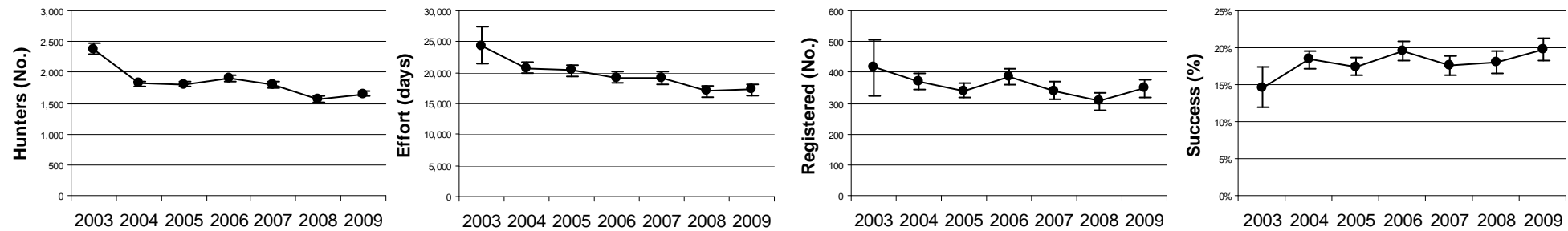
Payton, M. E., M. H. Greenstone, and N. Schenker. 2003. Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? *Journal of Insect Science* 3:34.



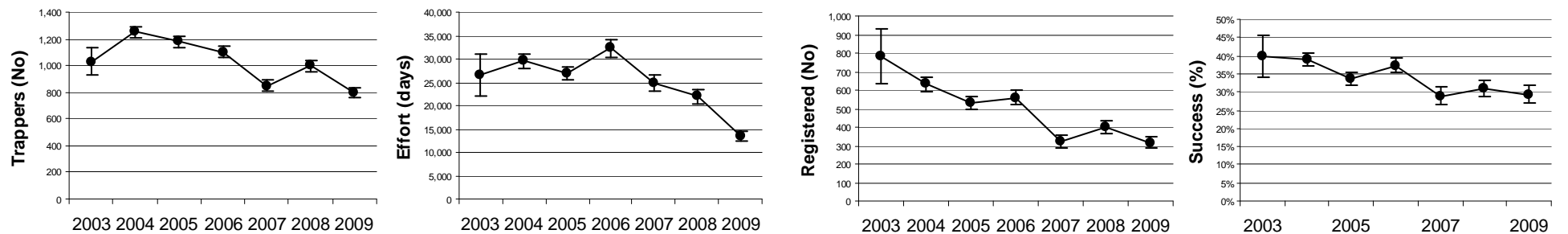
## Hunting and trapping combined



## Hunting



## Trapping



Year

Figure 2. Number of furtakers pursuing bobcats, number of days of effort, number of bobcats registered, and proportion of furtakers registering a bobcat in Michigan during 2003-2009, summarized by method of take. Number of hunters and trappers does not add up to statewide total of hunters and trappers combined because a person could both hunt and trap bobcats. Vertical bars represent the 95% CL.

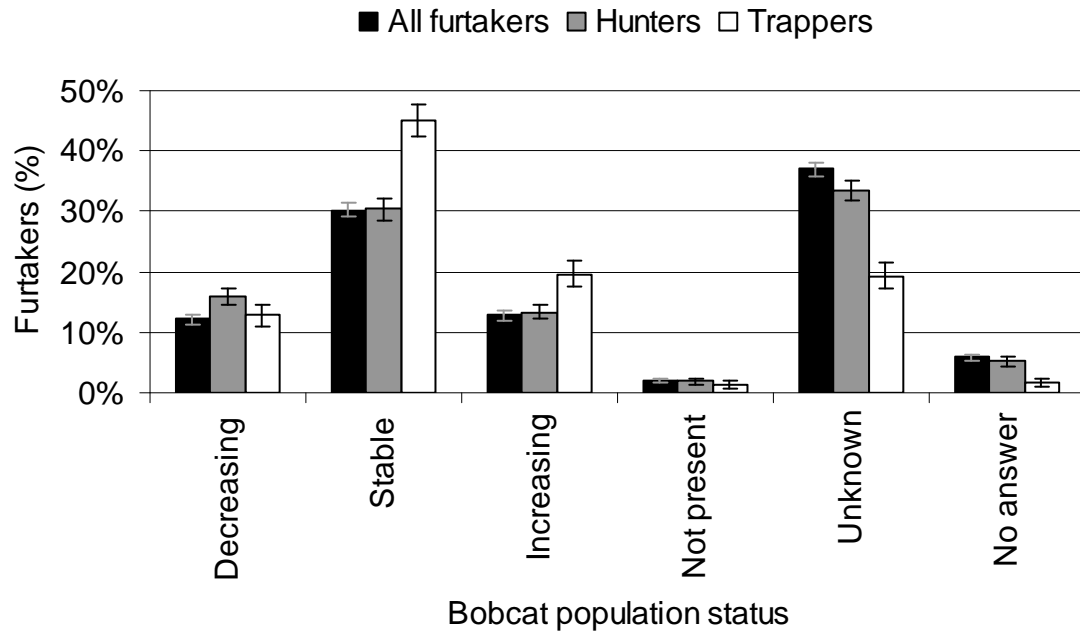


Figure 3. Status of bobcats in Michigan during 2009 as described by bobcat hunters and trappers. Vertical bars represent the 95% CL.

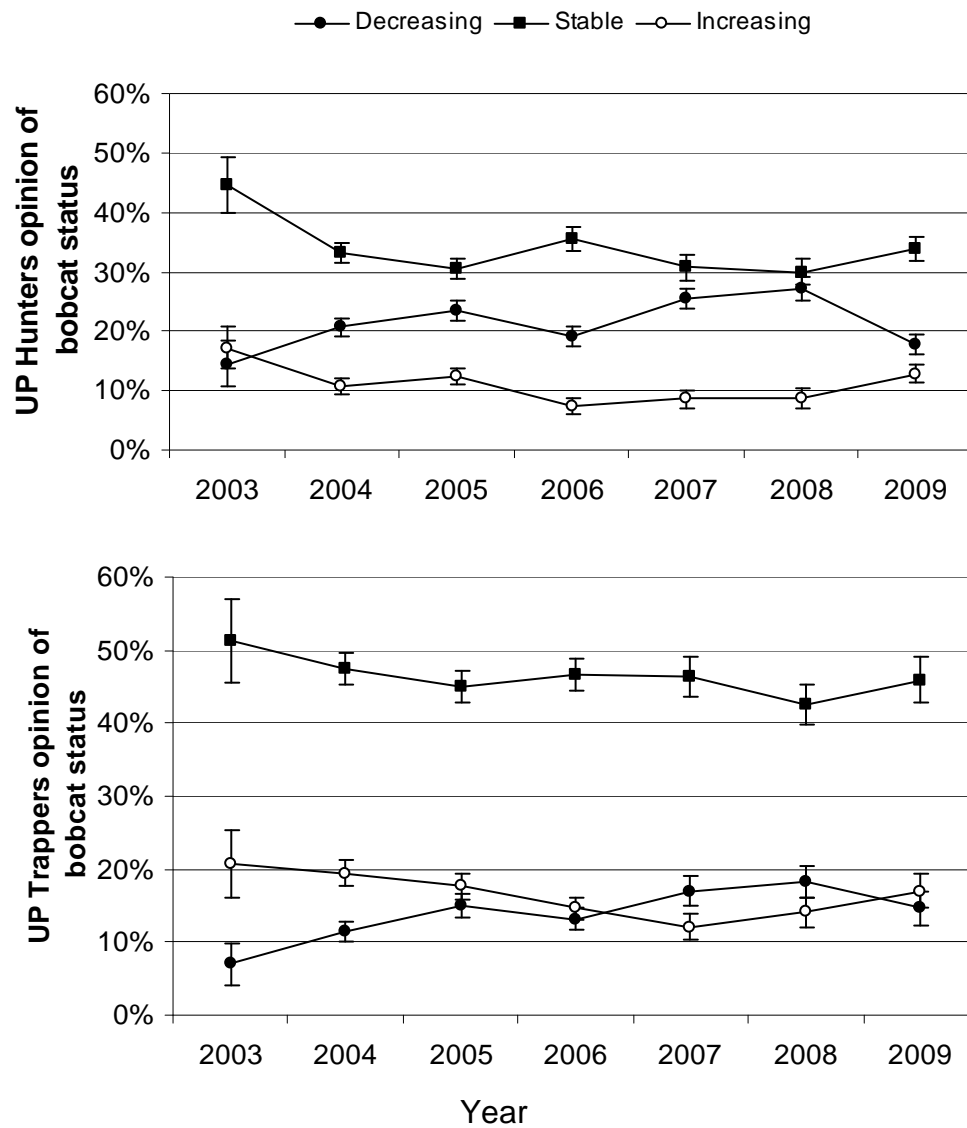


Figure 4. Status of bobcat population in Michigan as described by bobcat hunters and trappers in the Upper Peninsula, 2003-2009. Vertical bars represent the 95% CL.

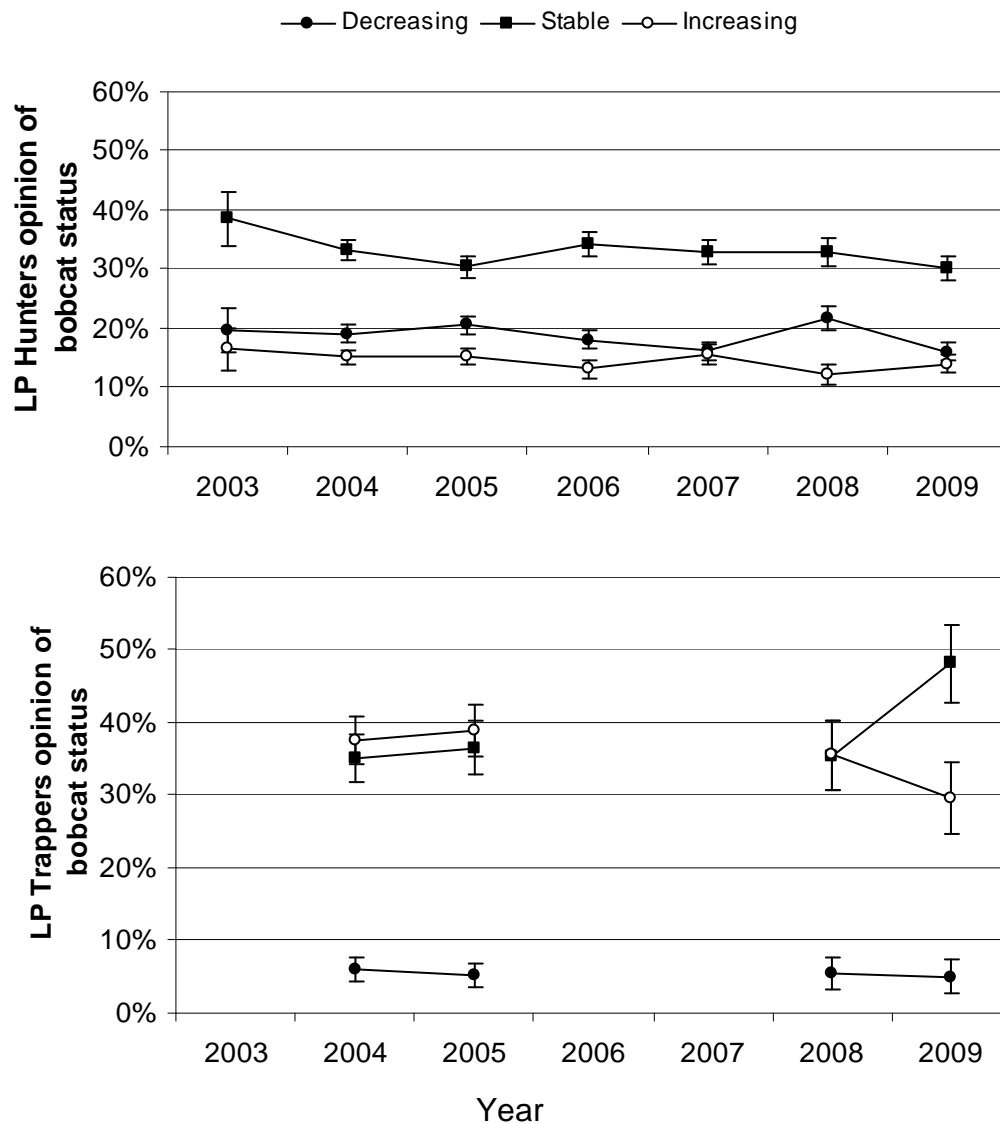


Figure 5. Status of bobcat population in Michigan as described by bobcat hunters and trappers in the Lower Peninsula, 2003-2009. Vertical bars represent the 95% CL.

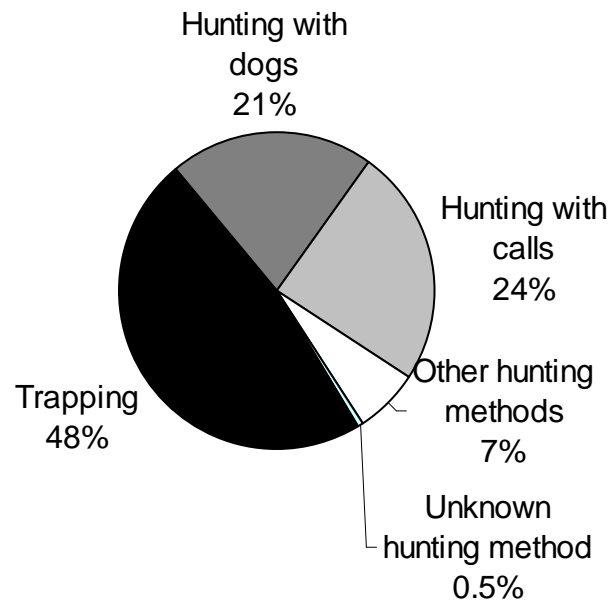


Figure 6. Proportion of bobcats registered in Michigan during 2009, summarized by method of take.

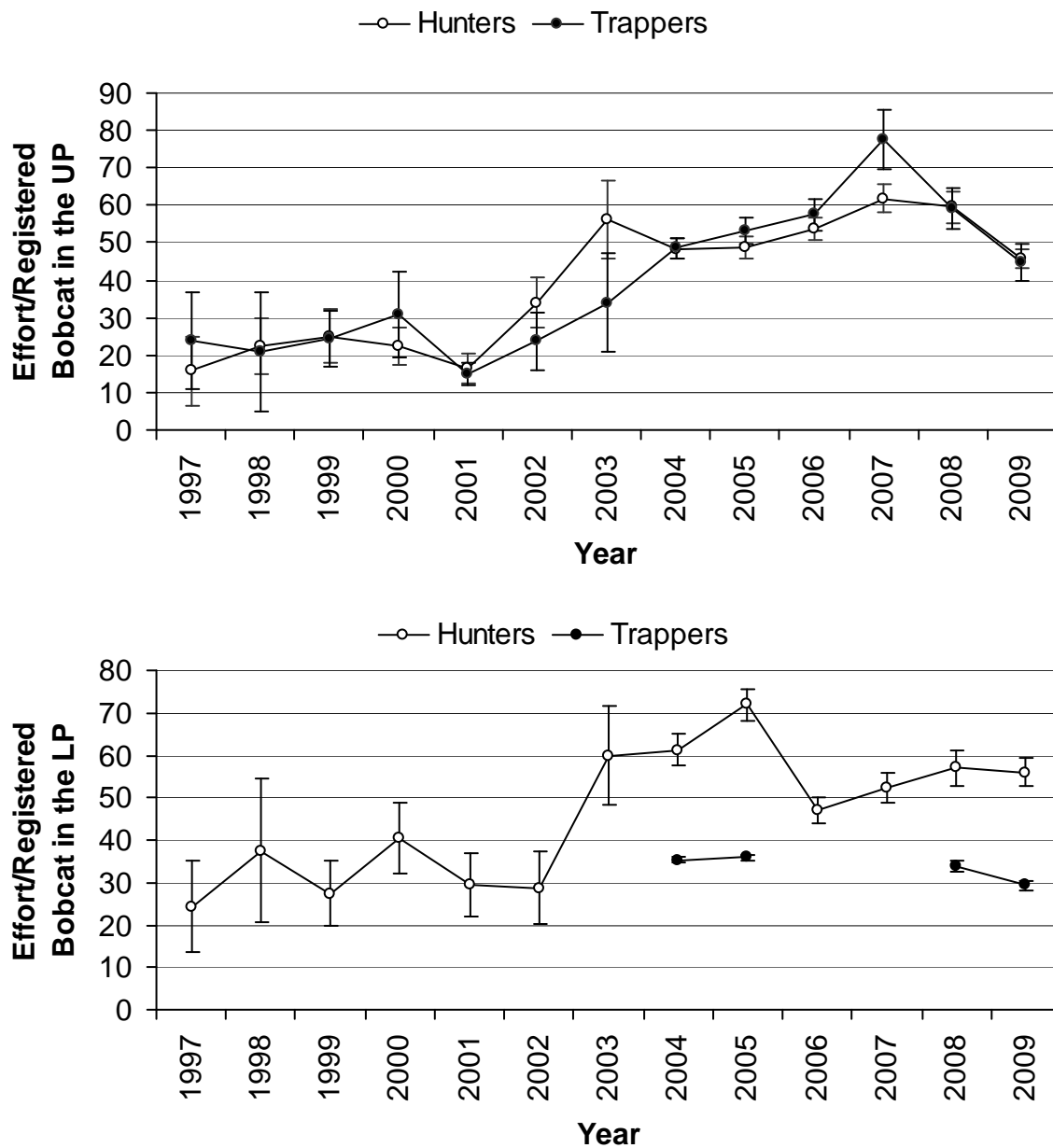


Figure 7. Estimated number of days of effort per bobcat registered in Michigan by hunters and trappers for the 1997-2009 seasons, summarized by region. Vertical error bars represent the 95% CL. Bobcat could be harvested by trappers in portions of the LP during 2004, 2005, and 2009 only.



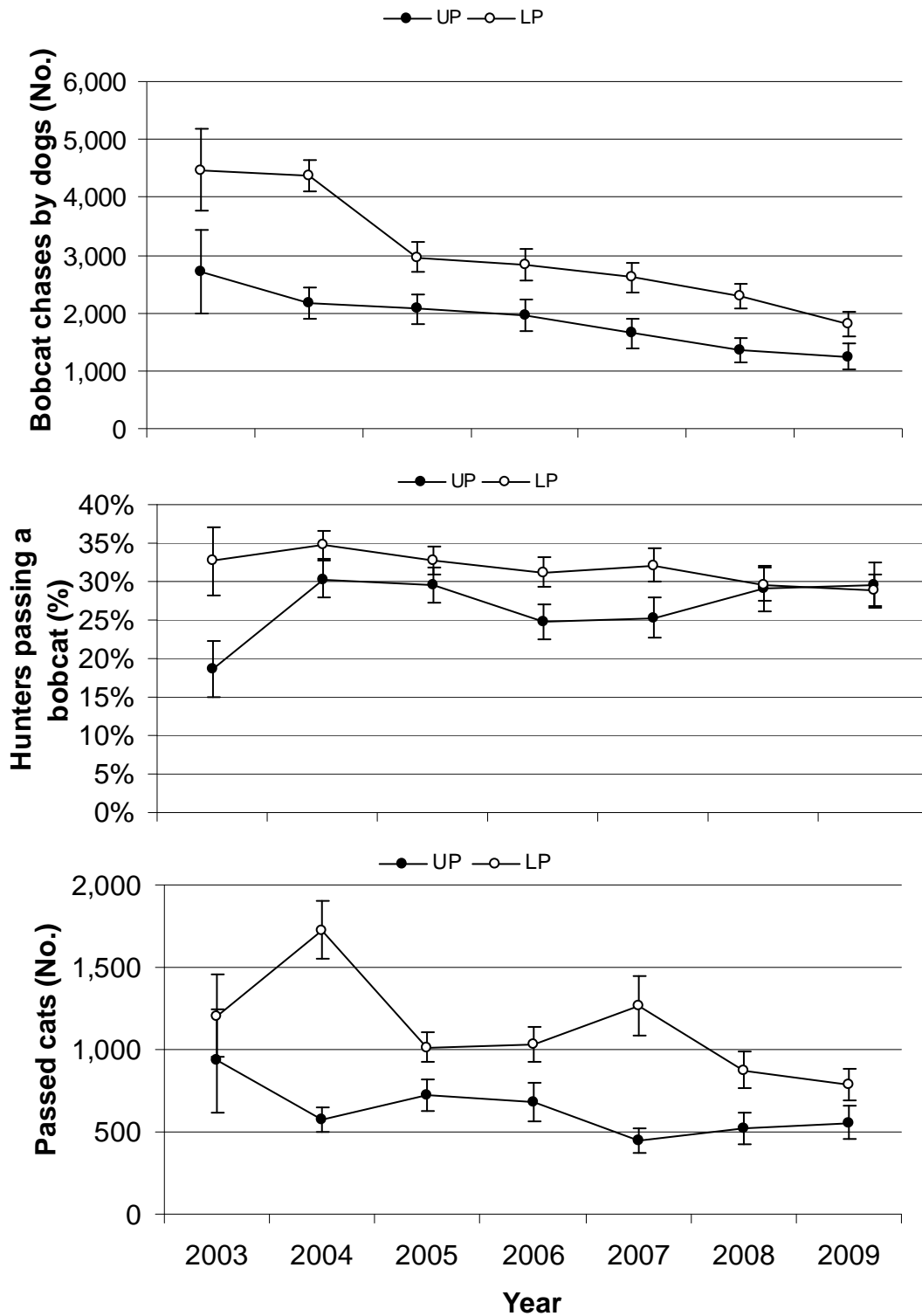


Figure 8. Number of bobcat chases by dogs, proportion of hunters passing a bobcat (bobcats within range or treed but not harvested), and number of bobcats passed by hunters (all types of hunting) in Michigan, 2003-2009. Vertical bars represent the 95% CL.

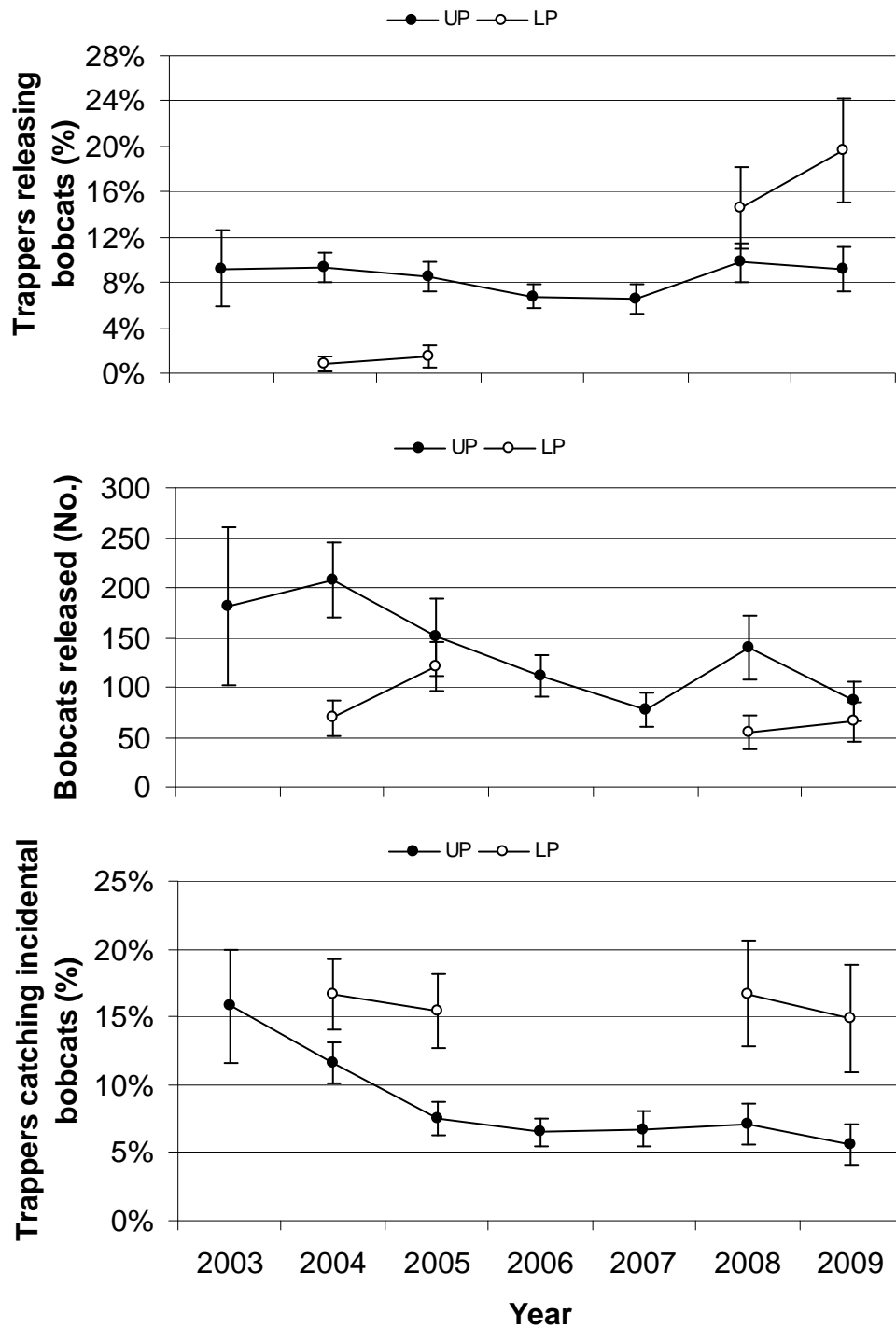


Figure 9. Number of trappers releasing bobcats from their traps, number of bobcats released from traps, and proportion of trappers that caught a bobcat in a trap set for another species (incidental catch) in Michigan, 2003-2009. Trapping of bobcat in the LP was permitted in 2004, 2005 and 2009, but not permitted in 2003, 2006, and 2007. Vertical bars represent the 95% CL.

Table 1. Resident bobcat hunting season dates and seasonal bag limits in Michigan, 1985-2009.

Year	State-wide bag limit <sup>a</sup>	Hunting season zone						
		Upper Peninsula <sup>b</sup>		Drummond Island		Lower Peninsula		
		Season dates	Bag limit <sup>a</sup>	Season dates	Bag limit <sup>a</sup>	North <sup>c</sup>	South <sup>d</sup>	Bag limit <sup>a</sup>
1985	None	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1986	None	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1987	None	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1988	None	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1989	1	10/25-3/1	1	Closed	0	1/1-3/1	1/1-2/1	1
1990	1	10/25-3/1	1	Closed	0	1/1-3/1	1/1-2/1	1
1991	1	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1992	1	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1993	1	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1994	2	10/25-3/1	2	Closed	0	1/1-3/1	1/15-2/16	1
1995	2	10/25-3/1	2	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1996	3	10/25-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1997	3	10/25-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1998	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
1999	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
2000	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
2001	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
2002	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
2003	3	12/1-3/1	3	12/1-3/1	1	1/1-3/1	1/15-2/16	1
2004	2	12/1-3/1	2	12/1-3/1	1	1/1-3/1	1/1-2/1	1
2005	2	12/1-3/1	2	12/1-3/1	1	1/1-3/1	1/1-2/1	1
2006	2	12/1-3/1	2	12/1-3/1	1	1/1-3/1	1/1-2/1	1
2007	2	12/1-3/1	2	12/1-3/1	1	1/1-3/1	1/1-2/1	1
2008	2	12/1-3/1	2	12/1-3/1	1	1/1-3/1	1/1-2/1	1
2009	2	1/1-3/1	2	1/1-3/1	1	1/1-3/1	1/1-2/1	1

<sup>a</sup>The statewide bag limit was the maximum number of bobcats that could be taken per person from all zones (hunting and trapping combined), and the bag limit for each zone was the maximum number that could be taken within a zone (hunting and trapping combined).

<sup>b</sup>Excluded Bois Blanc Island during 1985-1988 and Drummond Island in the Upper Peninsula.

<sup>c</sup>During 1985-1988, the North Zone included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Clare, Emmet, Montmorency, Oscoda, Otsego, and Presque Isle counties. Roscommon county was added during 1985-1986, and Arenac, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, and Roscommon counties were added in 1988. During 1989-2009, the North Zone included Alpena, Antrim, Charlevoix, Cheboygan, Emmet, Montmorency, Otsego, and Presque Isle. Alcona and Oscoda counties were added during 1991-2009.

<sup>d</sup>The South Zone did not exist before 1989. During 1989-2009, the South Zone included Clare, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, Roscommon, and Wexford counties, and Arenac County west of Highway I-75 and north of Highway M-61. The South Zone also included Alcona and Oscoda counties during 1989-1990.

Table 2. Resident bobcat trapping season dates and seasonal bag limits in Michigan, 1985-2009.

Year	State-wide bag limit <sup>a</sup>	Trapping season zone						
		Upper Peninsula <sup>b</sup>		Drummond Island		Lower Peninsula		
		Season dates	Bag limit <sup>a</sup>	Season dates	Bag limit <sup>a</sup>	North <sup>c</sup>	South <sup>d</sup>	Bag limit <sup>a</sup>
1985	None	10/25-3/1	None	Closed	0	Closed	Closed	0
1986	None	10/25-3/1	None	Closed	0	Closed	Closed	0
1987	None	10/25-3/1	None	Closed	0	Closed	Closed	0
1988	None	10/25-3/1	None	Closed	0	Closed	Closed	0
1989	1	10/25-3/1	1	Closed	0	Closed	Closed	0
1990	1	10/25-3/1	1	Closed	0	Closed	Closed	0
1991	1	10/25-3/1	1	Closed	0	Closed	Closed	0
1992	1	10/25-3/1	1	Closed	0	Closed	Closed	0
1993	1	10/25-3/1	1	Closed	0	Closed	Closed	0
1994	2	10/25-3/1	2	Closed	0	Closed	Closed	0
1995	2	10/25-3/1	2	10/25-3/1	1	Closed	Closed	0
1996	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
1997	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
1998	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
1999	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
2000	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
2001	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
2002	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
2003	3	10/25-3/1	3	10/25-3/1	1	Closed	Closed	0
2004	2	10/25-3/1	2	10/25-3/1	1	12/10-20	12/10-20	1
2005	2	10/25-3/1	2	10/25-3/1	1	12/10-20	12/10-20	1
2006	2	10/25-3/1	2	10/25-3/1	1	Closed	Closed	0
2007	2	10/25-3/1	2	10/25-3/1	1	Closed	Closed	0
2008	2	10/25-3/1	2	10/25-3/1	1	12/10-20	12/10-20	1
2009	2	12/1-2/1	2	12/1-2/1	1	12/10-20	12/10-20	1

<sup>a</sup>The statewide bag limit was the maximum number of bobcats that could be taken per person from all zones (hunting and trapping combined), and the bag limit for each zone was the maximum number that could be taken within a zone (hunting and trapping combined).

<sup>b</sup>Excluded Bois Blanc Island during 1985-1988 and Drummond Island in the Upper Peninsula.

<sup>c</sup>During 1985-1988, the North Zone included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Clare, Emmet, Montmorency, Oscoda, Otsego, and Presque Isle counties. Roscommon county was added during 1985-1986, and Arenac, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, and Roscommon counties were added in 1988. During 1989-2009, the North Zone included Alpena, Antrim, Charlevoix, Cheboygan, Emmet, Montmorency, Otsego, and Presque Isle. Alcona and Oscoda counties were added during 1991-2009.

<sup>d</sup>The South Zone did not exist before 1989. During 1989-2009, the South Zone included Clare, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, Roscommon, and Wexford counties, and Arenac County west of Highway I-75 and north of Highway M-61. The South Zone also included Alcona and Oscoda counties during 1989-1990.

Table 3. Estimated number of furtakers (hunters and trappers combined) pursuing bobcat and their hunting and trapping effort (days combined) in Michigan for 2008 and 2009, summarized by area.

(days combined) in Michigan for 2008 and 2009, summarized by area:										
Area	Furtakers <sup>a</sup>					Hunting and trapping effort				
	Year				Change (%)	Year				Change (%)
	2008		2009			2008		2009		
	No.	95 CL	No.	95 CL		Days	95 CL	Days	95 CL	
Upper Peninsula	1,209	45	994	40	-18*	26,741	1,707	18,403	1,178	-31*
Lower Peninsula	1,146	44	1,196	42	4	11,802	770	11,516	698	-2
Unit C	569	34	672	35	18*	6,085	571	6,923	585	14
Unit D	658	36	608	33	-8	5,717	497	4,594	358	-20*
Unspecified	96	15	134	17	40*	408	158	782	262	92
Statewide	2,358	48	2,234	45	-5*	38,950	1,792	30,701	1,307	-21*

<sup>a</sup>Number of furtakers does not add up to statewide total because furtakers could hunt in more than one area.

\*P<0.005.

Table 4. Estimated number of bobcats registered by furtakers (hunters and trappers combined) and proportion of furtakers registering at least one bobcat in Michigan during 2008 and 2009, summarized by area.

Registering at least one bobcat in Michigan during 2008 and 2009, summarized by area.										
Area	Bobcats registered <sup>a</sup>					Furtakers registering a bobcat				
	Year				Change (%)	Year				Difference (%)
	2008		2009			2008		2009		
	No.	95 CL	No.	95 CL		%	95 CL	%	95 CL	
Upper Peninsula	453	38	407	36	-10	29	2	30	2	2
Lower Peninsula	231	23	232	22	0	20	2	19	2	-1
Unit C	111	16	127	16	15	20	3	19	2	-1
Unit D	120	17	104	15	-13	18	2	17	2	-1
Unspecified	23	8	27	9	19	20	6	18	5	-2
Statewide	707	44	666	42	-6	25	1	25	1	-1

<sup>a</sup>Although all furtakers harvesting a bobcat were required to present their animals at a DNR office for registration, this survey does not present information collected from registered bobcats.

\*P<0.005.

Table 5. Estimated number of furtakers (hunters and trappers combined) attempting to capture a bobcat, days spent afield (effort), bobcats registered, and proportion of furtakers that registered a bobcat during 2009 in Michigan, summarized by county.

County	Furtakers <sup>a</sup>		Hunting and trapping effort (days)		Bobcats registered		Furtakers that registered a bobcat	
	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Alcona	141	17	1,218	218	29	8	20	5
Alger	44	10	479	145	18	6	40	11
Alpena	87	14	970	205	12	5	13	5
Antrim	31	8	291	136	3	3	10	8
Arenac	5	3	50	49	0	0	0	0
Baraga	49	10	896	225	11	6	19	8
Charlevoix	41	9	424	150	8	4	19	9
Cheboygan	73	12	705	202	11	5	15	6
Chippewa	131	17	1,706	354	47	13	26	6
Clare	67	12	475	127	9	4	13	6
Crawford	75	13	546	122	8	4	11	5
Delta	142	18	2,344	419	62	15	31	6
Dickinson	88	14	1,534	344	38	12	28	7
Emmet	47	10	554	170	10	5	20	9
Gladwin	47	10	239	65	3	3	7	6
Gogebic	88	14	1,296	262	39	11	32	7
Houghton	44	10	879	256	5	4	7	6
Iosco	72	12	458	108	11	5	16	6
Iron	103	15	1,303	291	30	9	26	6
Kalkaska	54	11	425	119	3	3	6	5
Keweenaw	11	5	181	122	5	4	30	21
Luce	44	10	461	150	10	6	15	8
Mackinac	101	14	1,357	295	41	12	30	7
Marquette	81	13	1,126	265	13	7	10	5
Menominee	137	17	2,816	497	35	10	21	5
Missaukee	64	12	335	74	4	3	7	4
Montmorency	123	16	857	147	13	5	10	4
Ogemaw	76	13	490	112	9	4	12	5
Ontonagon	70	12	1,250	318	40	12	39	9
Osceola	65	12	423	88	21	7	28	8
Oscoda	128	16	790	163	21	7	17	5
Otsego	33	8	212	72	4	3	13	8
Presque Isle	100	15	903	180	17	6	17	5
Roscommon	121	16	711	130	22	7	18	5
Schoolcraft	68	12	774	208	14	6	21	7
Wexford	67	12	443	100	13	5	20	7
Unspecified	134	17	782	262	27	9	18	5

<sup>a</sup>Number of furtakers does not add up to statewide total because furtakers could hunt and trap in more than one county.

Table 6. Estimated number of bobcat hunters and hunting effort (days) in Michigan for 2008 and 2009, summarized by area.

Area	Hunters <sup>a</sup>					Hunting effort				
	Year					Year				
	2008		2009		Change (%)	2008		2009		Change (%)
	No.	95% CL	No.	95% CL		Days	95% CL	Days	95% CL	
Upper Peninsula	590	34	565	33	-4	6,957	655	6,616	589	-5
Lower Peninsula	995	42	1,071	41	8	9,706	688	10,126	670	4
Unit C	511	32	624	34	22*	5,168	517	6,269	562	21*
Unit D	563	34	529	32	-6	4,538	416	3,857	328	-15
Unspecified	54	11	80	13	49*	310	144	473	142	53
Statewide	1,569	48	1,654	46	5	16,972	943	17,215	872	1

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

\*P<0.005.

Table 7. Estimated number of bobcats passed, bobcats registered by hunters, and proportion of hunters that registered at least one bobcat in Michigan for 2008 and 2009, summarized by area.

Area	Bobcats passed <sup>a</sup>					Bobcats registered					Hunters that registered a bobcat				
	Year					Year					Year				
	2008		2009		Change (%)	2008		2009		Change (%)	2008		2009		Difference (%)
	No.	95% CL	No.	95% CL		No.	95% CL	No.	95% CL		%	95% CL	%	95% CL	
Upper Peninsula	524	94	557	100	6	117	19	144	20	23	17	2	22	3	5*
Lower Peninsula	876	113	788	99	-10	171	19	184	19	8	17	2	17	2	0
Unit C	484	90	361	53	-25	90	14	113	15	26	18	3	18	2	1
Unit D	392	61	427	83	9	81	13	70	12	-13	14	2	13	2	-1
Unspecified	37	15	42	16	11	18	7	21	7	16	30	10	26	7	-4
Statewide	1,438	146	1,387	142	-4	306	27	349	28	14	18	1	20	1	2

<sup>a</sup>An estimated 11 ± 10 bobcats were passed by hunters using calls in areas not open for hunting during 2009; these passed bobcats were not included in statewide estimate.

\*P<0.005.

Table 8. Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan during 2009, summarized by county.

County	Hunters <sup>a</sup>		Hunting effort (days)		Bobcats passed by hunters <sup>b</sup>		Bobcats registered by hunters		Hunters that registered at least one bobcat	
	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Alcona	128	17	1,077	205	53	19	22	7	17	5
Alger	26	7	270	106	27	13	14	6	55	14
Alpena	78	13	858	195	43	15	11	5	14	6
Antrim	31	8	271	131	3	3	3	3	10	8
Arenac	5	3	50	49	5	6	0	0	0	0
Baraga	14	5	107	53	0	0	0	0	0	0
Charlevoix	38	9	405	149	26	12	6	4	17	9
Cheboygan	66	12	662	199	37	15	11	5	16	7
Chippewa	64	12	516	140	30	14	11	6	15	7
Clare	59	11	371	101	65	31	7	4	12	6
Crawford	70	12	520	121	30	10	6	4	9	5
Delta	89	14	1,016	245	81	27	22	8	21	6
Dickinson	55	11	472	138	46	16	12	6	16	7
Emmet	44	10	519	163	21	12	10	5	22	9
Gladwin	38	9	158	47	18	11	2	2	4	5
Gogebic	48	10	518	153	82	47	6	4	13	7
Houghton	23	7	230	83	5	4	0	0	0	0
Iosco	70	12	446	107	54	18	11	5	16	7
Iron	66	12	486	122	54	29	15	6	21	7

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

<sup>b</sup>Bobcats that hunter could have harvested but chose not to take.



Table 8. (Continued) Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan during 2009, summarized by county.

County	Hunters <sup>a</sup>		Hunting effort (days)		Bobcats passed by hunters <sup>b</sup>		Bobcats registered by hunters		Hunters that registered at least one bobcat	
	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Kalkaska	48	10	394	116	21	9	3	3	7	5
Keweenaw	6	3	66	60	0	0	0	0	0	0
Luce	34	9	150	50	2	2	0	0	0	0
Mackinac	66	12	660	194	54	35	21	8	25	8
Marquette	43	10	313	85	11	7	3	3	8	6
Menominee	97	15	1,121	243	98	41	21	7	20	6
Missaukee	59	11	299	70	54	26	4	3	7	4
Montmorency	114	15	729	130	49	16	13	5	11	4
Ogemaw	68	12	392	95	16	6	7	4	11	5
Ontonagon	39	9	386	123	34	18	6	4	16	9
Osceola	48	10	292	71	46	27	7	4	15	7
Oscoda	118	16	716	156	59	22	16	6	14	5
Otsego	32	8	207	72	14	8	4	3	13	8
Presque Isle	99	14	826	167	56	19	17	6	18	5
Roscommon	109	15	569	114	67	23	17	6	16	5
Schoolcraft	43	10	304	88	34	15	11	5	26	10
Wexford	54	11	367	95	51	25	4	3	8	5
Unspecified	80	13	473	142	42	16	21	7	26	7

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

<sup>b</sup>Bobcats that hunter could have harvested but chose not to harvest.

Table 9. Estimated number of days of effort per bobcat registered by hunters in Michigan during 2007-2009, summarized by year and area.

Area	Year						Change between 2008 and 2009 (%)
	2007		2008		2009		
	Effort per registered bobcat	95% CL	Effort per registered bobcat	95% CL	Effort per registered bobcat	95% CL	
Upper Peninsula	61.8	3.7	59.6	4.2	45.7	2.6	-23*
Lower Peninsula	52.2	3.6	57.0	4.2	56.0	3.3	-2
Unit C	67.7	3.1	57.4	2.9	55.6	2.6	-3
Unit D	40.5	2.0	56.7	2.9	56.8	2.1	0
Unspecified	70.4	0.7	16.2	0.6	21.5	0.6	
Statewide	56.2	5.3	55.6	5.9	49.5	4.2	-11

\*P<0.005. Comparison between 2008 and 2009.

Table 10. Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan during 2009, summarized by hunting method and area.

Variable and area	Hunting method							
	Dogs		Calls		Other		Unknown	
	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL
Hunters (No.) <sup>a</sup>								
UP	191	20	345	26	66	12	11	5
LP	426	29	625	34	67	12	27	8
Unit C	245	22	368	27	35	9	18	6
Unit D	209	21	306	25	32	8	10	5
Unspecified	43	10	27	8	5	3	10	5
Statewide	616	34	987	40	137	17	48	10
Hunting effort (Days)								
UP	2,411	391	3,506	389	600	180	99	60
LP	4,542	538	4,969	397	465	114	150	49
Unit C	2,908	455	2,995	316	274	94	93	37
Unit D	1,634	226	1,974	225	191	65	58	32
Unspecified	229	73	221	111	24	17	0	0
Statewide	7,182	681	8,695	546	1,088	213	250	77
Bobcats passed by hunters (No.)								
UP	344	91	170	36	42	16	2	2
LP	435	68	304	70	36	16	13	9
Unit C	210	44	123	25	19	13	10	8
Unit D	225	50	182	65	17	9	3	3
Unspecified	22	10	19	12	0	0	0	0
Statewide <sup>b</sup>	802	116	493	79	78	23	14	9
Bobcats registered by hunters (No.)								
UP	56	12	67	14	18	7	3	3
LP	68	12	90	14	26	7	0	0
Unit C	43	9	59	11	11	5	0	0
Unit D	25	7	31	8	15	5	0	0
Unspecified	16	6	5	3	0	0	0	0
Statewide	140	18	162	20	44	10	3	3
Hunters that registered at least one bobcat (%)								
UP	25	5	17	3	24	8	29	20
LP	16	3	14	2	39	9	0	0
Unit C	18	4	16	3	32	12	0	0
Unit D	12	3	10	3	47	13	0	0
Unspecified	37	11	18	11	0	0	0	0
Statewide	21	2	16	2	31	6	7	5

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

Table 11. Estimated number of bobcat hunters using dogs and their hunting effort (days) in Michigan for 2008 and 2009, summarized by area.

summarized by area.										
Area	Hunters using dogs <sup>a</sup>					Hunting effort				
	Year				Change (%)	Year				Change (%)
	2008		2009			2008		2009		
	No.	95% CL	No.	95% CL		Days	95% CL	Days	95% CL	
Upper Peninsula	225	22	191	20	-15	2,966	474	2,411	391	-19
Lower Peninsula	458	31	426	29	-7	5,032	518	4,542	538	-10
Unit C	228	22	245	22	8	2,815	415	2,908	455	3
Unit D	263	24	209	21	-21*	2,217	285	1,634	226	-26*
Unspecified	33	9	43	10	32	220	138	229	73	4
Statewide	669	36	616	34	-8	8,218	726	7,182	681	-13

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

\*P<0.005.

Table 12. Estimated number of bobcats passed, bobcats registered by hunters using dogs, and proportion of these hunters that registered at least one bobcat in Michigan for 2008 and 2009, summarized by area.

Area	Bobcats passed					Bobcats registered					Hunters that registered a bobcat				
	Year					Year					Year				
	2008		2009		Change (%)	2008		2009		Change (%)	2008		2009		Difference (%)
	No.	95% CL	No.	95% CL		No.	95% CL	No.	95% CL		%	95% CL	%	95% CL	
Upper Peninsula	338	79	344	91	2	62	14	56	12	-10	22	4	25	5	3
Lower Peninsula	549	96	435	68	-21	96	15	68	12	-29*	21	3	16	3	-5
Unit C	319	80	210	44	-34	48	10	43	9	-9	21	4	18	4	-3
Unit D	230	50	225	50	-2	49	10	25	7	-49*	18	4	12	3	-7
Unspecified	26	13	22	10	-14	13	6	16	6	23	40	13	37	11	-3
Statewide	913	125	802	116	-12	171	21	140	18	-18	24	2	21	2	-2

\*P<0.005.

Table 13. Estimated number of bobcat hunters using calls and their hunting effort (days) in Michigan for 2008 and 2009, summarized by area.

Area	Hunters using calls <sup>a</sup>					Hunting effort				
	Year				Change (%)	Year				Change (%)
	2008		2009			2008		2009		
	No.	95% CL	No.	95% CL		Days	95% CL	Days	95% CL	
Upper Peninsula	328	27	345	26	5	3,100	368	3,506	389	13
Lower Peninsula	545	33	625	34	15*	4,168	424	4,969	397	19
Unit C	279	25	368	27	32*	2,065	273	2,995	316	45*
Unit D	302	26	306	25	1	2,104	289	1,974	225	-6
Unspecified	20	7	27	8	39	85	39	221	111	160
Statewide	872	40	987	40	13*	7,353	558	8,695	546	18*

<sup>a</sup>Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

\*P<0.005.

Table 14. Estimated number of bobcats passed, bobcats registered by hunters using calls, and proportion of these hunters that registered at least one bobcat in Michigan for 2008 and 2009, summarized by area.

Area	Bobcats passed <sup>a</sup>					Bobcats registered					Hunters that registered a bobcat				
	Year					Year					Year				
	2008		2009		Change	2008		2009		Change	2008		2009		Differ- ence (%)
	No.	95% CL	No.	95% CL		No.	CL	No.	CL		%	CL	%	CL	
Upper Peninsula	134	33	170	36	26	38	10	67	14	77*	10	3	17	3	7*
Lower Peninsula	308	50	304	70	-1	63	12	90	14	42*	12	2	14	2	3
Unit C	154	32	123	25	-20	37	9	59	11	58*	13	3	16	3	3
Unit D	154	32	182	65	18	26	7	31	8	19	9	2	10	3	2
Unspecified	11	8	19	12	68	5	3	5	3	-2	25	15	18	11	-7
Statewide	453	60	493	79	9	106	16	162	20	53*	12	2	16	2	4*

<sup>a</sup>An estimated 11 ± 10 bobcats were passed by hunters using calls in areas not open for hunting during 2009; these passed bobcats were not included in statewide estimate.

\*P<0.005.

Table 15. Estimated number of bobcat trappers and their trapping effort (days) in Michigan for 2008 and 2009, summarized by area.

Area	Trappers <sup>a</sup>					Trapping effort				
	Year				Change (%) <sup>b</sup>	Year				Change (%) <sup>b</sup>
	2008 <sup>b</sup>		2009			2008 <sup>b</sup>		2009		
	No.	95% CL	No.	95% CL		Days	95% CL	Days	95% CL	
Upper Peninsula	731	38	547	33	-25*	19,784	1,565	11,787	981	-40*
Lower Peninsula	239	23	191	20	-20*	2,096	319	1,391	174	-34*
Unit C	100	15	89	14	-11	917	190	654	123	-29
Unit D	140	18	102	15	-27*	1,179	257	737	126	-38*
Unspecified	44	10	62	12	42	98	65	309	168	216
Statewide	1,001	42	794	38	-21*	21,978	1,586	13,467	999	-39*

<sup>a</sup>Number of trappers does not add up to statewide total because trappers could trap in more than one area.

<sup>b</sup>Not applicable because trapping of bobcat in the LP was not permitted in 2007.

\*P<0.005.

Table 16. Estimated number of bobcats captured, bobcats released alive, and bobcats registered by trappers in Michigan for 2008 and 2009, summarized by area.

Area	Bobcats captured					Bobcats released alive					Bobcats registered				
	Year					Year					Year				
	2008 <sup>a</sup>		2009		Change (%) <sup>a</sup>	2008 <sup>a</sup>		2009		Change (%) <sup>a</sup>	2008 <sup>a</sup>		2009		Change (%) <sup>a</sup>
	No.	95% CL	No.	95% CL		No.	95% CL	No.	95% CL		No.	95% CL	No.	95% CL	
Upper Peninsula	475	53	349	40	-26*	139	32	86	20	-38*	336	34	263	30	-22*
Lower Peninsula	116	23	113	25	-2	55	17	66	20	18	60	12	48	10	-21
Unit C	46	14	49	16	7	24	11	35	15	44	21	7	14	5	-35
Unit D	70	18	64	18	-8	31	13	30	13	-2	39	10	34	9	-13
Unspecified	5	4	13	9	162	0	0	6	5		5	4	6	5	31
Statewide <sup>b</sup>	596	57	475	48	-20*	195	36	158	29	-19	401	36	317	32	-21*

<sup>a</sup>Not applicable because trapping of bobcat in the LP was not permitted in 2007.

<sup>b</sup>An estimated 22 ± 27 bobcats were captured and released alive by trappers in areas not open to bobcat hunting (Unit E) in 2008. This estimate was not included in 2009 statewide estimates of bobcats captured and released by trappers.

\*P<0.005.

Table 17. Estimated proportion of bobcat trappers that captured at least one bobcat and proportion that registered at least one bobcat in Michigan for 2008 and 2009, summarized by area.

Area	Trappers that captured a bobcat					Trappers that registered a bobcat				
	Year				Difference	Year				Difference
	2008 <sup>a</sup>		2009			2008 <sup>a</sup>		2009		
	%	95% CL	%	95% CL		%	95% CL	%	95% CL	
Upper Peninsula	38	3	38	3	0	34	3	33	3	-1
Lower Peninsula	33	5	37	5	4	25	4	24	5	-1
Unit C	31	7	36	8	5	21	6	16	6	-5
Unit D	35	6	38	7	3	28	6	32	7	4
Unspecified	7	6	8	5	0	7	6	5	4	-2
Statewide	36	2	35	3	-1	31	2	29	2	-2

<sup>a</sup>Not applicable because trapping of bobcat in the LP was not permitted in 2007.

\*P<0.005.

Table 18. Estimated number of days of effort per bobcat registered in Michigan by trappers for the 2007-2009, summarized by year and area.<sup>a</sup>

Area		Year						Change between 2008 and 2009 (%) <sup>a</sup>
		2007 <sup>a</sup>		2008 <sup>a</sup>		2009		
		Effort per registered bobcat	95% CL	Effort per registered bobcat	95% CL	Effort per registered bobcat	95% CL	
Upper Peninsula	77.6	8.2	59.2	5.5	44.7	5.1	-24*	
Lower Peninsula	NA	NA	34.0	1.3	29.3	1.1	-14*	
Unit C	NA	NA	42.5	0.9	48.6	1.0	14*	
Unit D	NA	NA	29.4	1.0	21.6	0.7	-26*	
Unspecified	NA	NA	19.8	0.2	47.2	0.8	138*	
Statewide	77.6	8.2	55.3	5.5	42.4	5.2	-23*	

<sup>a</sup>Not applicable because trapping of bobcat in the LP was not permitted in 2007.

\*P<0.005. Comparison between 2008 and 2009.

Table 19. Estimated number of trappers, trapping effort (days), bobcats captured, bobcats released, bobcats registered, and proportion of trappers that captured and registered a bobcat in Michigan during 2009, summarized by county.

County	Trappers <sup>a</sup>		Trapping effort (days)		Bobcats captured by trappers		Bobcats released alive by trappers		Bobcats registered by trappers		Trappers that captured at least one bobcat		Trappers that registered at least one bobcat	
	No.	95%	No.	95%	No.	95%	No.	95%	No.	95%	%	95%	%	95%
		CL		CL		CL		CL		CL		CL		CL
Alcona	19	7	141	55	10	5	3	3	6	4	42	17	33	16
Alger	19	7	210	91	8	5	5	4	3	3	33	16	17	13
Alpena	15	6	112	49	11	10	10	10	1	0	27	16	6	2
Antrim	3	2	20	21	2	2	2	2	0	0	62	28	0	0
Arenac	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baraga	39	9	789	214	19	8	8	6	11	6	37	12	25	10
Charlevoix	3	3	19	16	2	2	0	0	2	2	50	42	50	42
Cheboygan	11	5	43	26	5	3	5	3	0	0	50	24	0	0
Chippewa	82	13	1,190	311	41	12	5	4	36	11	33	8	29	8
Clare	13	5	104	47	5	4	3	3	2	2	25	18	13	14
Crawford	5	3	26	15	3	4	2	2	2	2	38	33	38	33
Delta	67	12	1,328	337	51	16	11	8	40	12	43	9	40	9
Dickinson	44	10	1,062	294	34	14	8	6	26	10	36	11	36	11
Emmet	5	3	35	26	0	0	0	0	0	0	0	0	0	0
Gladwin	11	5	82	44	5	4	3	3	2	2	29	20	14	16
Gogebic	47	10	778	194	42	13	9	6	32	10	49	11	49	11
Houghton	26	8	649	224	6	5	2	2	5	4	19	12	13	10
Iosco	5	3	13	12	2	2	2	2	0	0	33	33	0	0
Iron	42	10	817	250	21	10	6	8	14	6	35	11	31	11

<sup>a</sup>Number of trappers does not add up to statewide total because trappers could trap in more than one county.



Table 19. (Continued) Estimated number of trappers, trapping effort (days), bobcats captured, bobcats released, bobcats registered, and proportion of trappers that captured and registered a bobcat in Michigan during 2009, summarized by county.

County	Trappers <sup>a</sup>		Trapping effort (days)		Bobcats captured by trappers		Bobcats released alive by trappers		Bobcats registered by trappers		Trappers that captured at least one bobcat		Trappers that registered at least one bobcat	
	No.	95%	No.	95%	No.	95%	No.	95%	No.	95%	%	95%	%	95%
		CL		CL		CL		CL		CL		CL		CL
Kalkaska	7	4	31	21	0	0	0	0	0	0	0	0	0	0
Keweenaw	6	4	115	78	5	4	0	0	5	4	50	30	50	30
Luce	22	7	311	126	16	11	6	6	10	6	37	15	29	15
Mackinac	41	10	697	211	22	10	2	2	20	9	34	11	34	11
Marquette	43	10	813	250	13	8	3	3	10	6	19	9	15	8
Menominee	61	12	1,696	393	22	11	8	5	14	7	21	8	16	7
Missaukee	5	3	35	26	0	0	0	0	0	0	0	0	0	0
Montmorency	17	6	128	51	10	7	10	7	0	0	30	17	0	0
Ogemaw	11	5	98	45	3	4	2	2	2	2	14	16	14	16
Ontonagon	42	10	864	257	46	15	13	7	34	12	65	11	50	12
Osceola	22	7	131	47	22	11	8	6	14	6	56	16	56	16
Oscoda	13	5	74	41	11	8	6	8	5	3	50	21	38	21
Otsego	1	0	5	0	0	0	0	0	0	0	0	0	0	0
Presque Isle	10	5	77	42	0	0	0	0	0	0	0	0	0	0
Roscommon	16	6	142	55	16	12	11	10	5	3	39	18	29	17
Schoolcraft	29	8	470	177	3	3	0	0	3	3	11	9	11	9
Wexford	13	5	76	32	9	4	0	0	9	4	68	17	68	17
Unspecified	62	12	309	168	13	9	6	5	6	5	8	5	5	4

<sup>a</sup>Number of trappers does not add up to statewide total because trappers could trap in more than one county.

Table 20. Trap type used by bobcat trappers in Michigan during 2009.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	76	2	607	34
Conibears	44	3	347	27
Other <sup>a</sup>	1	0	5	3

<sup>a</sup>Included snares and live traps, although snares were not legal to use to capture bobcats.

Table 21. Preferred trap type of bobcat trappers in Michigan during 2009.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	42	3	335	26
Conibears	33	3	262	24
No preference	16	2	130	17
Other <sup>a</sup>	1	1	10	5
No answer	7	1	58	11

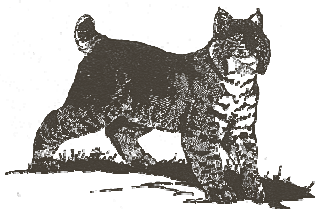
<sup>a</sup>Snares were not legal to use to capture bobcats.

Appendix A. The questionnaire sent to people that obtained a bobcat harvest tag in Michigan for the 2009 bobcat hunting and trapping seasons.



BOBCAT HUNTER AND TRAPPER SURVEY

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



- It is important that you complete and return this questionnaire even if you did not harvest a bobcat during the 2009-10 hunting and trapping seasons (December 1, 2009, through March 1, 2010).
- Only the person this questionnaire was addressed to should answer these questions. Do not report results for another person.
- You can report online at <https://secure1.state.mi.us/wildlifesurveys/bobcat.aspx>.

PART A: Hunting Questions (Questions about trapping are on reverse side)

1. Did you hunt bobcats during the 2009-10 season?

<sup>1</sup> ☐ Yes                      <sup>2</sup> ☐ No (Skip to Question #9)

2. How many years have you hunted bobcats? \_\_\_\_\_ Years

3. If you hunted bobcats during the 2009-10 season, please complete the following table.

HUNTING METHOD (Select hunting method used.)	COUNTY HUNTED (For each hunting method used, list the county that you hunted on separate lines.)	NUMBER OF DAYS HUNTED (Count all days hunted even if you did not have an opportunity to take a bobcat)	NUMBER OF BOBCAT REGISTERED (Count only bobcat where a seal was attached to the pelt, and the animal was returned to you.)	NUMBER OF BOBCATS NOT TAKEN (Count the number of bobcats you called within range or treed but chose <u>not</u> to harvest.)
<sup>1</sup> <input type="checkbox"/> Dogs <sup>2</sup> <input type="checkbox"/> Calls <sup>3</sup> <input type="checkbox"/> Other				
<sup>1</sup> <input type="checkbox"/> Dogs <sup>2</sup> <input type="checkbox"/> Calls <sup>3</sup> <input type="checkbox"/> Other				
<sup>1</sup> <input type="checkbox"/> Dogs <sup>2</sup> <input type="checkbox"/> Calls <sup>3</sup> <input type="checkbox"/> Other				
<sup>1</sup> <input type="checkbox"/> Dogs <sup>2</sup> <input type="checkbox"/> Calls <sup>3</sup> <input type="checkbox"/> Other				

4. On what lands did you hunt bobcats during the 2009-10 season? (You may check more than one.)

- <sup>1</sup> ☐ Property owned by me or my family

<sup>2</sup> ☐ Private land, with permission
- <sup>3</sup> ☐ Private land open to public hunting  
(For example, Commercial Forests, Hunter Access Program)

<sup>4</sup> ☐ Public land (State Game Area, State or National Forest, etc.)

5. Did you hunt bobcats with dogs during the 2009-10 season?

<sup>1</sup> ☐ Yes                      <sup>2</sup> ☐ No (Skip to Question #9)

6. Who owned the dogs that you used to hunt bobcats during the 2009-10 season? (Check one)

- <sup>1</sup> ☐ Normally use dogs that I own.

<sup>2</sup> ☐ Normally use dogs owned by someone else.
- <sup>3</sup> ☐ Normally use a combination of my dogs and dogs owned by someone else.

7. Report the number of bobcat chases with dogs you participated in during the 2009-10 season.

\_\_\_\_\_ Chases
8. Did you hire a guide to assist with hunting bobcats at any time during the 2009-10 season?

1

☐

Yes

2

☐

No

PART B: Trapping Questions

9. Did you attempt to harvest a bobcat while trapping in the 2009-10 season?

1

☐

Yes

2

☐

No (Skip to Question #16)
10. How many years have you trapped bobcats?

\_\_\_\_\_ Years
11. If you trapped bobcats during the 2009-10 season, please complete the following table.

COUNTY TRAPPED (List each county that you trapped for bobcat.)	NUMBER OF DAYS TRAPPED	NUMBER OF BOBCAT CAUGHT AND RELEASED (Count only bobcats you released alive from your traps.)	NUMBER OF BOBCAT REGISTERED (Count only bobcat where a seal was attached to the pelt, and the animal was returned to you.)

12. On what lands did you trap bobcats during the 2009-10 season? (You may check more than one.)

1

☐

Property owned by me or my family

2

☐

Private land, with permission

3

☐

Private land open to public hunting  
(For example, Commercial Forests, Hunter Access Program)

4

☐

Public land (State Game Area, State or National Forest, etc.)
13. Which capture method did you use when you attempted to harvest bobcats in the 2009-10 season? (Check all that apply.)

1

☐

Foothold traps

2

☐

Conibears

3

☐

Other (please specify \_\_\_\_\_)
14. Which capture method do you prefer to catch bobcats? (Check one.)

1

☐

Foothold traps

2

☐

Conibears

3

☐

No preference

4

☐

Other (please specify \_\_\_\_\_)
15. Did you catch any bobcats in traps that were set for another species in the 2009-10 season?

1

☐

Yes

2

☐

No

PART C: General Questions

16. Compared to the previous three years, what is the status of bobcats in the county that you prefer to hunt or trap bobcats in the 2009-10 season?

1

☐

Increasing

2

☐

Decreasing

3

☐

Stable

4

☐

Not present

5

☐

Unknown
17. Do you have any comments or suggestions about bobcat management in Michigan? Also describe any other incidental bobcats you may have captured but have not reported on this report.